



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,191	06/23/2006	Takeki Shirai	062714	3849
38834 7590 01/13/2009 WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036				
EXAMINER				
WATTS, ALAN B				
ART UNIT		PAPER NUMBER		
3656				
MAIL DATE		DELIVERY MODE		
01/13/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/584,191

**Applicant(s)**

SHIRAI ET AL.

**Examiner**

ALAN B. WAITS

**Art Unit**

3656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 October 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2 and 4-8 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 2 and 4-8 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10/23/2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. Figure 9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeki JP 04-164540.

Takeki discloses a similar device comprising:

Re clm 1:

- a hollow track (1005, fig 23) member having a slit (open portion where element 1003 fits into the track, fig 23) extending in an axial direction thereof

- a movable member (1003, fig 23) disposed inside the track member to be movable along the track member
- a drive mechanism (A, 7, 3, 2, 1; fig 23) [for moving the movable member along the axial direction of the track member]
- the track member has, in a section perpendicular to the axial direction of the track member, a guide portion (1004, fig 23) [for guiding movement of the movable member]
- at least two extensions (bottom portion of 1005 that is narrower than the widest section of the circle in 1005, fig 23) opposing to each other
- each of the extensions extending from the guide portion so as to cover the movable member
- the slit is formed between the opposing extensions (fig 23)
- a width of the slit of the track member is narrower than a width of the movable member (as shown in fig 23)
- an outer periphery of the track member has a substantially circular-arc shape in the section (portion of 1005 that holds 1003 is substantially circular-arc shaped, fig 23)

Re clm 2:

- the single slit is formed at only one portion in a circumferential direction of the track member in a section perpendicular to the axial direction of the track member (as shown fig 23)

Re clm 6:

- a hollow track (1005, fig 23) member having a slit (open portion where element 1003 fits into the track, fig 23) extending in an axial direction thereof
- a movable member (1003, fig 23) disposed inside the track member to be movable along the track member
- a drive mechanism (A, 7, 3, 2, 1; fig 23) [for moving the movable member along the axial direction of the track member]
- an outer periphery of the track member has a substantially circular-arc shape in section perpendicular to the axial direction of the track member (portion of 1005 that holds 1003 is substantially circular-arc shaped, fig 23)

Re clm 8:

- a hollow track (1005, fig 23) member having a slit (open portion where element 1003 fits into the track, fig 23) extending in an axial direction thereof
- a movable member (1003, fig 23) disposed inside the track member to be movable along the track member
- the track member has, in a section perpendicular to the axial direction of the track member, a guide portion (1004, fig 23) [for guiding movement of the movable member]

- an extension (bottom portion of 1005 that is narrower than the widest section of the circle in 1005, fig 23) extending from the guide portion so as to cover the movable member
- a width of the slit of the track member formed between the opposed extensions is narrower than a width of the movable member (as shown in fig 23)
- an outer periphery of the track member as a substantially circular-arc shape in the section (portion of 1005 that holds 1003 is substantially circular-arc shaped, fig 23)

***Claim Rejections – 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo et al. US 2003/0164054 in view of Takeki JP 04-164540.

Kuo discloses a similar device comprising:

Re clm 1:

- a hollow track member (1, fig 4) having a slit (opening at top of 1, fig 4) extending in an axial direction thereof
- a movable member (2, fig 4) disposed inside the track member to be movable along the track member

- a drive mechanism (3,fig 4) [for moving the movable member along the axial direction of the track member]
- the track member has, in a section perpendicular to the axial direction of the track member, a guide portion (u-shaped inner section of 1, fig 4) [for guiding movement of the movable member]

Kuo does not disclose:

- at least two extensions opposing to each other
- each of the extensions extending from the guide portion so as to cover the movable member
- the slit is formed between the opposing extensions
- a width of the slit of the track member is narrower than a width of the movable member
- an outer periphery of the track member has a substantially circular-arc shape in the section

Takeki teaches:

- at least two extensions (bottom portion of 1005 that is narrower than the widest section of the circle in 1005, fig 23) opposing to each other
- each of the extensions extending from the guide portion so as to cover the movable member (fig 23)
- the slit is formed between the opposing extensions (fig 23)
- a width of the slit of the track member is narrower than a width of the movable member (as shown in fig 23)

- an outer periphery of the track member has a substantially circular-arc shape in the section (portion of 1005 that holds 1003 is substantially circular-arc shaped, fig 23)

Since both Kue and Takeki teach a screw and nut system support on a hollow track, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute Kue's u-shaped track for Takeki's track comprising:

- at least two extensions opposing to each other
- each of the extensions extending from the guide portion so as to cover the movable member
- the slit is formed between the opposing extensions
- a width of the slit of the track member is narrower than a width of the movable member
- an outer periphery of the track member has a substantially circular-arc shape in the section

to achieve the predictable result of an improved track shape that better prevents the moveable member from become dislodged from the track.

Kuo further discloses, re clm 4:

- the track member is formed with a rolling member rolling groove (12, fig 4) extending in the axial direction thereof as the guide portion
- the movable member is formed with a loaded rolling member rolling groove opposing to the rolling member rolling groove formed to the track member (opposite 12 on 2, fig 4)



- a number of rolling member (8, fig 4) are interposed between the rolling member rolling groove of the track member and the loaded rolling member rolling groove of the movable member to be rollable therebetween

Re clm 6:

- a hollow track member (1, fig 4) having a slit (opening at top of 1, fig 4) extending in an axial direction thereof
- a movable member (2, fig 4) disposed inside the track member to be movable along the track member
- a drive mechanism (3,fig 4) [for moving the movable member along the axial direction of the track member]

Kue does not disclose:

- An outer periphery of the track member has a substantially circular-arc shape in section perpendicular to the axial direction of the track member

Takeki teaches:

- An outer periphery of the track member has a substantially circular-arc shape in section perpendicular to the axial direction of the track member (as shown in fig 23)

Since both Kue and Takeki teach a screw and nut system support on a hollow track, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute Kue's u-shaped track for Takeki's track comprising:

- An outer periphery of the track member has a substantially circular-arc shape in section perpendicular to the axial direction of the track member

to achieve the predictable result of an improved track shape that better prevents the moveable member from become dislodged from the track.

Kuo further discloses, re clm 7:

- the drive mechanism is provided with a screw portion formed to the movable member and a screw shaft to be screw engaged with the screw portion (as shown by the interaction of elements 2 and 3, fig 4)
- the screw shaft penetrating the movable member (as shown in fig 4)
- the screw shaft has a center line coincident with a center line of an output shaft of a drive source rotating the screw shaft (94 with the coupling, fig 1; [0016])
- the drive source has an outer substantially circular shape in a section perpendicular to the axial direction of the track member (as shown by the motor mounting 421, fig 1)

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeki JP 04-164540 as applied to claim 1 above, and further in view of JP 61-29163.

Takeki discloses all the claimed subject matter as described above.

Takeki does not disclose:

- the track member is provided with a cover member expandable or contractible in the axial direction of the track member so as to entirely cover the track member in the section perpendicular to the axial direction of the track member

- a portion of the movable member projecting over the slit of the track member penetrates the cover member.

JP 04-164540 teaches:

- the track member is provided with a cover member (16, fig 1) expandable or contractible in the axial direction of the track member so as to entirely cover the track member in the section perpendicular to the axial direction of the track member (as shown in fig 1)
- a portion of the movable member (top of 14, fig 1) projecting over the slit of the track member penetrates the cover member

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Takeki and provide:

- the track member is provided with a cover member expandable or contractible in the axial direction of the track member so as to entirely cover the track member in the section perpendicular to the axial direction of the track member
- a portion of the movable member projecting over the slit of the track member penetrates the cover member.

for the purpose of protection the shaft from dirty and debris.

***Response to Arguments***

7. Applicant's arguments filed October 23, 2008 have been fully considered but they are not persuasive.

Applicant argues that the outer periphery of the element has a rectangular shape. The outer periphery of the element 1005 is substantially circular-arc shaped, as shown in fig 23.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN B. WAITS whose telephone number is (571)270-3664. The examiner can normally be reached on Monday through Friday 7:30 am to 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alan B Waits/  
Examiner, Art Unit 3656

/Richard WL Ridley/  
Supervisory Patent Examiner, Art Unit 3656